Idaho Mining and Exploration
1996
Virginia S. Gillerman
1995 RECLAMATION AWARDS

- Special: Emerald Creek Garnet
- Soft Rock: Rhone Poulenc
- Placer: Jim Riggan
- Exploration: Echo Bay Expl., Inc.
- Contractor: J.R. Thornton Const.
- Env. Coord.: Crellin Scott
NEW GOLD RECORD

- 1995:
  - 300,023 ounces
- 1st place: Black Pine Mine
- 1941 - 149,816 ounces gold
1995 IDAHO PHOSPHATE

- Tons Mined: 6.75 million
- Raw Ore Value: $125.3 million
  ($18.56 per ton, approx.)
- Processed Ore Value: $664.8 million
  ($98.4 per ton, approx.)
Idaho: Raw Ore Values (%)

- Phosphate: 59.6
- S & G/Stone: 27.5
- Cement/Lime: 10.7
- Other: 2.1
- Other: garnet, pumice, feldspar, gems, clay, zeolites
- 1994 data
Emmett sand dazzles Hawaii golfers

Sugar-white grains mined in Idaho fill golf-course bunkers

By John Tucker
The Idaho Statesman

EMMETT — Unimin Corp., west of Emmett, processes a product that drives golfers crazy — sand.

The pure white sand, mined from the foothills of Freeze Out Hill, is sold to golf courses as far away as Hawaii and Alberta, Canada. The sand is used to fill bunkers, golf course hazards meant to make playing more difficult.

The fine, sugary-like grains of sand have made the Connecticut-based Unimin the leading supplier of bunker sand in the United States.

The company has sold sand to the Mauna Kea and the Mauna Lani golf courses on the big island of Hawaii, among others.

"The government won’t let us use sand from Hawaii’s beaches for our bunkers,” said Scott Bridges, the golf pro at the Mauna Lani course.

"Filling our golfers the white sand is from Idaho, the land of potatoes, surprises them,” Bridges said. The sand also is renowned locally.

Attracted by the pure appearance of the sand, one of the recently opened 5 Star Country Club north of Emmett bought enough to fill its bunkers.

"Last summer, I took the golfers over to Emmett and pitched shots out of the sand,” said Jerry Troy, the course superintendent.

"The color was terrific and we wanted something new. We decided to go with the Emmett sand.”
Award Winning Operations

- Carpenter Creek Project
- Black Pine Mine
- Champagne Mine
- Rasmussen Ridge Mine
- Gibbonsville Placer
- Kilgore Project
- Black Pine Mine Project
- Black Pine Mine Coordinator
Good Morning. Thank Earl Bennett and various agency geologists for loaning slides, plus all the company geologists who have provided info.

**NONFUEL MINERAL PRODUCTION GRAPH**
Including value of processed phosphate, 1995 production value was just over $1 billion.


3. **Sunshine mine.** Sunshine Mining and Refining So. Flagship operated all year. Hurt by declining silver prices, but encouraged by

4. **West Chance X-Section.** Success with exploration of new West Chance discovery. Plan to double production and add 60 miners. Company also has hot Ag-tin property in Argentina.

5. **Galena mine.** Silver Valley Resources, a JV of ASARCO and Coeur d’Alene Mines, opened the Coeur mine and announced that operations will resume in the Galena, where new computer-aided exploration has resulted in the discovery of several new ore zones.

6. **Lucky Friday mine.** Hecla’s silver-lead mine aided by good lead prices.

7. **Lucky Friday - 5500 level, drilling.** Use special underhand mining method. Sandfill barely visible in roof, above Lucky Friday galena and quartz vein where drill is.

8. **Gold Hunter Long Section.** Gold Hunter project is about a mile north of Lucky Friday. Considerable exploration success. Drilling from new 4900 level drift off Friday
improved estimates from 4050 level. Estimate 50 million ounces of silver in Gold Hunter deposit.

DD. BUNKER HILL STACK, PRE-DEMOLITION (# 1 of 4)


EE. BUNKER HILL STACK DEMOLITION (#3 of 4)

10. Bunker Hill Stack Demolition (#4 of 4). It's gone. The smelter and zinc plants were also taken down. Remediation of Bunker superfund site continued. North Idaho floods in March eradicated some of the channel restoration projects.

ALSO OF NOTE: Idaho Geological Survey started an Inactive and Abandoned Mine survey for the Forest Service, Region I. Work this year was principally in the Silver Valley. Contact Earl Bennett to learn more.

FF. PHOSPHATE DISTRICT MAP


12. FMC Dry Valley mine, P & H shovel. FMC Corporation will mine about 1.5 million tons of phosphate ore from their Dry Valley mine; they had a good year with a pre-Halloween scare October 20, 1996, when a footwall failure dumped 120,000 tons of rock down into the pit. The slide pushed a 25 yd. shovel and lube truck 80 feet across the pit, half-burying them. Luckily the 2 operators were not hurt. The $ 2.5 million P & H shovel was a total loss, but insured. Delineation drilling and reclamation activities continued.

13. FMC Elemental Phosphorous plant. FMC ore goes by train to their elemental phosphorous plant in Pocatello, the largest of its kind. Used in numerous foods and industrial products.

14. Simplot Acid Plant. Across the street is Simplot's phosphoric acid plant. The acid is used to make liquid and granular fertilizers. Green superphosphoric acid is main product. Each plant employs some 500 workers.

15. Simplot Mill- Smoky Canyon mill. Simplot mines ore from Smoky Canyon mine near Wyoming border. Largest producer, extracting 2.3 million tons this year.
The concentrate pumped through 87 mile slurry line to Pocatello plant.

16. **Simplot Smoky Canyon mine, D3 pit.** Mining in D3 pit and backfilling D2. Active exploration program drilled 75 RC holes on Deer Creek and Sawmill Canyon properties. Like other companies, waiting to see BLM-FS EIS for Manning Creek and Dairy Syncline proposed lease areas.

17. **Rhone-Poulenc Rasmussen Ridge mine, looking N.** Rhone-Poulenc will send some 1.7 million tons of ore to Agrium’s plant, now that their Silver Bow, MT plant is closed. Rhone-Poulenc also had a high wall failure in July, pushed 1 million tons of material into the pit. Slide area had been monitored and equipment pulled out before it went. Mining and delineation drilling to north.

18. **Rhone-Poulenc crew at Reclamation Awards.** Rhone-Poulenc’s reclamation program won the Land Board award for soft rock mines. Particularly noted was their surface water management plan and concurrent reclamation and hydromulching of waste dumps at Rasmussen Ridge.

19. **Agrium Fertilizer plant, Conda.** Ore from Rasmussen goes to Agrium’s phosphoric acid fertilizer plant at Conda. Canadian-based Agrium, Inc., bought out the NuWest plant in late 1995. Producing at full capacity with 300 employees. Green super phos acid is main product. Fertilizer market good.

20. **Monsanto Enoch Valley mine.** Monsanto mines Penn.-Permian Phosphoria Fm. From Enoch Valley mine. Turned in a mine plan to BLM for South Rasmussen property and drilled 28 RC exploration holes at Caldwell Canyon. Made the headlines this fall by installing world’s 1st artificial bat cave, a T-junction of culvert pipes buried in a reclaimed portion of the mine. Trying to attract endangered Western Big-Eared Bat in cooperative effort with Bat Conservation International.

21. **Monsanto Elemental Phosphorous plant.** Monsanto’s ore is processed at elemental plant near Soda Springs. 400 employees work 2 12-hour shifts and provide a $70 million annual payroll to Caribou County economy. Kilns turn ore into clinker, which is fed into electric furnaces which separate out the phosphorous as gas that is cooled into liquid and shipped in special railroad cars to other Monsanto plants. Roundup herbicide is major use.

22. **Kerr-McGee Vanadium plant.** Ferrophos slag from Monsanto’s furnaces is sent across street to KerrMcGee vanadium extraction plant. This year they also used slag from Rhone-Poulenc’s closed Silver Bow plant. In October, completed 16 years without lost time injury and ranked as 17th safest chemical plant in world.
23. Thompson Creek Mo mine, overview of pushback. Thompson Creek Mining Company continued full operations at molybdenum mine west of Challis. Major pushback to unload a slide and enlarge the pit. Added a rebuilt 15 yd. hydraulic shovel and new 992 loader. 190 employees.

24. Thompson Creek pyrite reduction plant. Much effort going to acid rock management plan to alleviate any potential for future problems. Built this pyrite reduction plant which removes 80% of pyrite from mill tails before they go to impoundment.

25. Thompson Creek ARD dump. Also building a special dump for potentially acid-generating waste and capping it with volcanic fines to prevent water and oxygen access. Working with Forest Service on supplemental EIS for the environmental program.

26. Stibnite Mine, heap leach pads. Very busy season at Dakota Mining’s Stibnite operation in central Idaho. Seasonal heap leach gold mine. By year’s end, should move 3 million tons rock including 960,000 tons ore at grade of 0.032 opt Au. (30,000 ounces) Dakota and Hecla agreed to unitize their property and pursue developing the major sulfide resource (1.8 million ounces) in the district.

27. Stibnite Mine, West End pit. Finished mining at the original West End pit, where mining started in 1981. West End is third backfilled.


29. Stibnite, Exploration trench on Cinnamid Target. Exploration and mine permitting continued on the 5 additional pits and other targets in the district. Trench on Cinnamid deposit. (Cinnamid, Ridgetop, Broken Hill, Upper Cinnamid, ?)

30. Stibnite, drill rig on Broken Hill orebody. Stibnite geologists drilled 30,000 feet of core and RC drilling, plus much surface work.

31. Stibnite, Meadow Creek reclamation project. Dakota also completed a major reclamation effort, inc. the Meadow Creek project, where straw mattes, logs, rocks and vegetation were used to protect the creek from adjacent old tailings.

32. Rescue mine drift, Warren. CSC Mining continued to work on ore block definition at the Rescue mine in Warren. Small underground gold mine and mill. Another small gold mine operating near Salmon was US Antimony’s
Yellowjacket mine in Lemhi County. Open pit mine, but was doing underground development drifting.

33. **Hecla Grouse Creek- Sunbeam pit overview.** West of Challis, Hecla mined the Sunbeam pit at their ill-fated Grouse Creek mine in Custer County. Mining 200,000 tons of (0.04 opt Au) ore a month and twice that of waste. By end of 3rd quarter, produced 40,000 ounces of gold at cash cost of $315. Extensive 1995 drill program of over 100 holes reassessed reserve at Sunbeam and the unmined Grouse Creek deposit. Sunbeam pit will be mined out next spring. The mine, which opened in 1995, represents a $100 million investment for Hecla, which announced this fall that they would close down the Grouse Creek mine next spring.

34. **Hecla Grouse Creek, tailings impoundment.** The mine had to close for May to July to raise the tailings dam from 7210' to 7250' height, in order to hold rest of Sunbeam tailings and allow freeboard for storms. EPA fine ($85,000) for discharges.

35. **Pegasus’ Black Pine mine, C/D pit.** Black Pine Mine, a Pegasus Gold operation, in Cassia County will also be closing next year as planned due to exhaustion of ore reserves, although the exploration staff keeps finding more small pods, like the just-opened NE Tolman. Opened in 1991. Black Pine produced 108,000 ounces of gold last year and should recover about 83,000 ounces in 1996 from sediment-hosted, disseminated deposit. Mined in C and D pits. Wet weather caused some high wall problems that lost about 12,000 ounces from the mine plan.

36. **Black Pine mine overview.** Lean and Mean, heap leach operation made money this year, even mining 0.016 opt gold. Also cleaned up with 3 Land Board reclamation awards this year. Ongoing reclamation with major project reclaiming haul road to E pit (upper one).

37. **Meridian Gold Beartrack mine, South Pit.** Meridian Gold Company is back as operator of the Beartrack mine after FMC spun off FMC Gold. The Lemhi County mine (dedicated last year) should produce close to 100,000 ounces of gold in 1996. First half production was mainly from South pit and then shifted to North pit. Two RC and 3 core rigs were drilling over 40,000 feet this year to define reserves across the Mason-Dixon line between the two deposits.

38. **Meridian Beartrack Crusher.** Crusher and soft ore problems were being resolved at Beartrack. About 20,000 tpd crusher capacity. Gold recovered in standard heap leach process.

39. **Kinross DeLamar mine, Glensilver Extension pit.** Down south in the desert of Owyhee County, Kinross extracted gold and silver from the Glensilver Extension pit, one of last pits from DeLamar mine, which has about a year of reserves left. Open pit
mining at DeLamar started in 1977, and over 16 million tons mined to date.

40. **Kinross Stone Cabin mine, TipTop pit.** Kinross’ main production shifted this year to new Stone Cabin mine, 7 miles east of DeLamar. Ore is trucked to DeLamar countercurrent vat leach. Two pits open, Tip Top (shown here) and the Stone Cabin. About a 7-year mine life projected.

41. **Kinross mill, Knelson Concentrator.** Stone Cabin ore carries more and coarser gold. To aid gold recovery in the mill, Kinross installed this Knelson Centrifugal Concentrator into the middle of the grinding circuit. It must be working; there was a padlock on the steel box where the gravity cons come out.

42. **Twin Springs Placer mine, George Castle.** Another gravity gold recovery operation is George Castle’s placer of high gravels along the Middle Fork of the Boise River. Interesting and hospitable for field trip of Boise mining buffs. A few other placers around state and lots of recreational gold dredgers and panners.

**INDUSTRIAL MINES MAP**

43. **Idaho Industrials, Raw Ore Values (%).** Comparing values of raw ore production of Idaho’s industrial minerals, #1 is phosphate, #2 is aggregate, #3 is limestone related. Big to very small operations, stable base economy.

44. **Gowen Road Sand and Gravel Pit.** Construction is booming in Boise and other cities in Idaho, and so is the sand and gravel business.

45. **Emerald Creek Garnet, washing plant.** Nation’s largest producer of industrial garnets is Emerald Creek Garnet near Fernwood. Production disrupted in early spring by major north Idaho flooding and mud.

46. **Emerald Creek Garnet, concentrate.** Subsidiary of Western Garnet Company. Added properties in India and New York. Won a reclamation award for Carpenter Creek project.

47. **Chemical Lime, Ten Mile Pass overview from quarry.** In SE Idaho, view to Chemical Lime plant from their limestone quarry at Ten Mile Pass. Crushed limestone goes on conveyor to:

48. **Chemical Lime, Maerz kiln.** Plant with 173’ double-shafted Maerz kiln. Roasts limestone at 1980 degrees F. Uses 1 million cu.ft. Natural gas per day. Running a little below the 600 tpd capacity. Send pure lime to Geneva Steel, gold mines, and other uses. Give them a call if you need any.
49. **Ash Grove Cement, overview.** Ash Grove Cement operates only Idaho cement plant at Inkom, south of Pocatello. Business good with record sales. Over 227,000 tons of cement sold. In process of converting second kiln to burn used tires.

50. **Ash Grove Cement, computer controls.** Employ 70 people, work 24 hrs/day. Fully computer controlled. Do their own QAQC. Investigating the feasibility of producing pozzolan cement at the plant.

51. **Unimin, Emmett sand headlines.** Unimin Corporation's Emmett sand quarry and plant made headlines in March with their pure white golf course bunker sand. Most of sand goes to glass-making and abrasives use. Unimin's BenJel clay mine was sold to CARCO.

Other operations near Boise mine zeolites, bentonite, oolitic limestone, and one rancher near Weiser is looking for someone to mine his diatomite deposit.

52. **Three Rivers Stone.** Dimension stone producers include Three Rivers stone near Clayton and two large Oakley Stone companies near Oakley, Idaho. Business was booming. Three Rivers added new dozer and excavator. Rock goes to California.

53. **Rocktile yard, Boise.** Some of stone goes through Rocktile's Boise tile-cutting plant. The company had an excellent year and was running two shifts, largely due to increased overseas sales in Japan and Europe.

**Idaho Travertine** in Idaho Falls had a fair year, quarrying about 1000 tons of travertine and cutting that and other stone for facing and building purposes. Put 9000 sq. ft. of travertine on new religion building at Ricks College.


55. **Hess Pumice plant, Malad.** Also in Malad, Hess Pumice operated their new, and old, grinding plants to process pumice from the Wrights Creek mine. The pumice is used in concrete blocks, abrasives, and their special low heavy mineral fine pumice is increasingly used for polishing TV and computer screens. The new $3 million plant (on left) opened in April. It is exclusively for grinding the low heavy mineral pumice. Production in the 30,000 tons per year range.

56. **Hess Pumice, gyratory shifter.** The grinding circuits use a complex array of screens, to classify and size sort the pumice. These gyratory shifters, adapted from those in flour mills, hold multiple screen sizes to classify the pumice. Rigorous QAQC.

**II. RECLAMATION AWARD WINNERS (by category)**

Idaho Land Board or state or federal agency recognize good environmental citizen.
57. **Reclamation Award-winning Operations.** For 1995 work. (Emerald Creek Garnet for Carpenter Creek project; Black Pine mine for Black Pine, and Idaho Gold for closed and completely reclaimed Champagne mine; Rhone-Poulenc for Rasmussen Ridge mine; Jim Riggan for Gibbonsville placer mine; Echo Bay for Kilgore Exploration project; J.R. Thornton, contractor, for work at Black Pine; and Crellin Scott, Environmental Coordinator at Black Pine.) For work in 1995.

**BLACK PINE MINE AWARD WINNERS**

Crellin Scott, env. Coord.; Clayton Kroll, mine manager; J.R. Thornton

58. **Echo Bay Exploration, Kilgore staff.** Accepting award for Echo Bay from Secretary of State Cenerusa are geologist Larry Pancoast and a couple of the guys who help do the work.

**EXPLORATION 1996 MAP**

(About the same level of activity as last year. Still some exciting advanced projects and recon programs.)

59. **Buffalo Gulch mine (air), Elk City.** In north Idaho, Idaho Consolidated Metals Corporation (ICM) picked up the Buffalo Gulch deposit near Elk City. The deposit was explored and permitted by Idaho Gold Corporation (Bema, Inc.) about 1990, but never developed. ICM is trying to reactivate the permits and drilled 10 holes there. 

**Cyprus Amax** continued work along the Orogrande area in Idaho County west of Elk City. They drilled 16 holes on the Petzite mine property and did surface recon.

60. **DSA drill site in cirque, Bear Peak.** Curator American intersected stratabound zinc mineralization (in this hole) at Bear Peak off the North Fork of the Big Lost River in the mountains above Sun Valley. But it wasn’t enough to beat the Boulder-White Clouds Coalition’s objections to the high country project which had been ongoing for several years. They pulled out and reclaimed the drill site and roads this summer.

**Biomyne** did drill a hole near Rooks Creek west of Ketchum.

61. **USMX Dewey Dome.** USMX had better plans at the Dewey mine property in the Thunder Mountain District east of Stibnite. They filed a Notice of Intent to Operate with federal and state agencies and started baseline studies to permit a seasonal, heap leach, open pit operation in Valley County. Plans call for processing 5.3 million tons of ore over 5-6 years mine life. Strip ratio is 1/1. Yearly gold production would be approximately 50,000 ounces with 100,000 ounces of silver.

62. **USMX Geotech rig.** Water quality monitoring, fish studies and geotechnical investigations for waste dump construction were ongoing. USMX leases the private ground from Thunder Mountain Gold and the Dewey Mining Company. They will be able to use the flat, reclaimed ridgetop at the adjacent site of Coeur d’Alene Mines.
Sunnyside and Lightning Peak mines, which operated from 1981-1990.

63. **Cominco core, Salmon.** (Pete Ellsworth, con. geo) Cominco American was one of several companies back exploring the rocks near Salmon. The company has been prospecting for Proterozoic-age syngenetic base metal deposits in north Idaho for several years. They drilled a hole at the reacquired Iron Creek Cu-Co show, and at a nearby Twin Peaks property.

Two other projects changed hands, without any substantive work during the year. **Newmont** turned the intriguing Musgrove property back to Atlas Precious Metals. Results had been interesting, but presumably not quite up to the Carlin specs. **AGR** parent company, International Gold Resources, was bought by **Ashanti**, an African gold mining company. Their U.S. properties, including the Ditch Creek deposit and Arnett Creek project, are up for sale.

64. **Formation Capital Sunshine Project Core at Camp.** Formation Capital Corporation again had one of the larger efforts in the state at their Sunshine Project in the Blackbird Mining District. The target is syngenetic cobalt-copper-gold mineralization, similar to that on the adjoining Blackbird mine, where Noranda still maintains the patented claims. (1982 Noranda reserves of 5.3mt at 0.71% Co, 1.2% Cu)

Cobalt spot price was $21 per pound in mid-November. Formation was really racking up the core in late September after Phase I drilling of 21,000 feet on the Sunshine (6 holes), East Sunshine (20 holes), and Northfield (3 holes) zones.

65. **Formation Tech measuring specific gravity of core.** After last year's successful program (67 holes, 32,745' core) on Sunshine project and reserve of 147,719 tons (0.9% Co, 0.5% Cu, 0.023 opt Au) (potential resource of half million tons), Formation is trying to bridge the gap from exploration to reserve delineation and development. Paying careful attention to engineering details, such as measuring specific gravity of core to calculate tonnage factors.

66. **Formation Capital, Trench on Cougar Zone.** In addition to drilling, they have had crews of geologists and samplers out mapping and collecting an additional 10,000 soils on the large acreage project.

67. **Formation Capital, rock with cobaltite seams, RAM prospect.** As the cobaltite (CoAsS) veins in this surface discovery show, the recon is discovering new target areas. Five new cobalt zones have been identified: the Ram, Fiji, Lodge Pole, Camp and Bedroom Shaft; as defined by mapping, soil geochem and geophysics. Also hold claims on four other Co properties in belt.

68. **Blackbird Remediation, backfilling pit.** Complicating the traffic pattern on Formation's project is the ongoing EPA-lead remediation of the Blackbird minesite. Contractor Envirocon has a mind-boggling 200 workers onsite. Are backfilling Blackbird
open pit, completing 5 dams for waste rock, and will be driving a decline through Blackbird Mountain to divert water to Noranda’s treatment plant. Newest controversy is over what to call background copper levels of creeks in the region.

69. **Salmon Canyon Copper, main adit.** Another Formation cobalt property is Salmon Canyon Copper, on the NW end of the Cobalt Belt in metamorphosed strata. Double Creek Mining optioned the property. Co-Cu-Au mineralized horizon exposed in back of adit. Double Creek relogged core from Inspiration (?). Drill permit delayed by untimely and sad death of fisheries biologist Richard Konapecky, who drowned in the Snake River while working. Double Creek was allowed to drill one hole which just ended last month.

70. **Golconda drilling, VAR claims, Consolidated Mercury.** In southwestern Idaho, Golconda explored the VAR claims at the Consolidated Mercury prospect in Washington County. Drilled Golconda also called their diamond play near McCall late in the fall. At the Idaho Almaden mine, International Freegold excavated test pits and drilled the mercury mine, which hosts a low grade gold resource, which has difficult metallurgy.

71. **Doug Glaspey, Atlanta project.** The Atlanta project and Ramrod Gold was taken over by Quest International Resources Corp. who announced plans to conduct a feasibility study on mining of the 1 million ounce gold and 2.5 million ounce silver resource outlined on 2678 acres near the town of Atlanta northeast of Boise. The property was drilled by Atlanta Gold over the past few years. The proposed open pit, heap leach operation will be highly controversial in the rustic mountain town.

72. **Cambior, Sultana project, core rig, Mackay.** Cambior Exploration’s Sultana project is in a much more favorable setting at ranching-dominated Mackay in Custer County. Cambior acquired the ground in late 1994 and conducted surface work last year. Drilling with two core rigs, has been slow going, but results are encouraging and they expect to drill as long as weather permits.

73. **Cambior- core with chrysacolla, Mackay.** The old Empire copper mine is on 95% private ground in the White Knob Mountains, where skarn with Cu-Fe-Au mineralization surrounds a granite porphyry. About 26 holes drilled to date along the lengthy skarn zone.

74. **White Knob Challenge mountain bikers at Empire Copper.** As evidence of the multiple use concept reigns in Mackay, the town hosts the annual White Knob Challenge Mountain Bike race, attracting 500 riders from all over the West. The grueling 19 mile course ascends 2600 ft. on old mine roads and a narrow gauge line up to the old Empire mine. Cambior geologists cooperated with race organizers, even to constructing a road around a dump to bypass a fallen mine building. The “ultimate buns of copper” contest.
75. Camouflage Salon, St. Anthony: Echo Bay office. Echo Bay Exploration gets the CIA award for best field office cover. The company JV'd the Kilgore project from Placer Dome in June, 1994. The young, epithermal deposit, was originally drilled by Bear Creek in 1983, and Echo Bay has been active the past two years.

LL. KILGORE DRILL PAD AFTER DRILLING/RECLAM.
(Wood lath marks DH)

76. Echo Bay drill rig, Kilgore project, on talus. Since Echo Bay took over two years ago, they have drilled 110 holes with no new roads built. This is the before and after. No wonder they received the Reclamation Award. 1995 drilling totalled 31,000' of core and RC. The Phase III program from Jan. to Sept. 1996 involved 16,000' of core and 11,000' of RC. Core drilling is all helicopter supported.

MM. FMC ELEMENTAL PHOS PLANT AT NIGHT

77. Spenser Opal Closeup. As you can see there is a wide range of Idaho mineral production, and a lot more out there to find.

THANK YOU
Slide 1

Idaho Mining and Exploration
1996

Virginia S. Gillerman

Slide AA Slide # is described in accompanying Notes at end of this PowerPoint.

Slide 2

IDAHO NONFUEL MINERAL PRODUCTION ($000's)

Slide BB

Slide 3

COEUR D'ALENE DISTRICT

Slide CC
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IDaho Geological Survey

Slide 11

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Slide 3
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Slide 85  Slide LL Kilgore drill pad after reclamation

Slide 86  Slide MM  FMC elemental plant at night.